

A Xenolite of the Eclogite With Diamonds

SOV/20-126-3-50/69

great depths - though from smaller depths than the garnet peridotites. The taking hold of xenolites of diamond-containing eclogites does by no means justify the assertion that all diamonds in kimberlites are xenogenous. The diamond crystallization in the kimberlite magma, or in any case the genetic relation to this magma, are now established (Ref 1). There are 3 figures, 2 tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Amakinskaya ekspeditsiya Ministerstva geologii i okhrany nedr SSSR (Amakinskaya Expedition of the Ministry of Geology and for the Protection of Mineral Resources USSR)

SUBMITTED: March 26, 1959

Card 3/3

KALYUZHNYI, Vladimir Antonovich; SOBOLEV, V.S., akademik, otv.red.;  
CHEKHOVICH, N.Ya., red.izd-va; LISOVETS, O.M. [Lysovets', O.M.],  
tekhn.red.

[Methods for studying multiple inclusions in minerals] Metody  
vyyvchennia bahatofazovykh vkluchchen' u mineralakh. Kyiv, Vyd-vo  
Akad.nauk URSR, 1960. 167 p. (MIRA 13:8)  
(Minerals)

PHASE I BOOK EXPLOITATION SOV/5325

International Geological Congress. 21st, Copenhagen, 1960.

Granito-gneysy (Gneissose Granites) Kiyev, Izd-vo AN UkrSSR, 1960. 174 p. 1,000 copies printed. (Series: Doklady sovetskikh geologov, problema 14) Added t. p. in English.

Sponsoring Agency: Akademiya nauk Soyuza SSR. Akademiya nauk Ukrainskoy SSR. Ministerstvo geologii i okhrany nedr SSSR. Natsional'nyy komitet geologov Sovetskogo Soyuzu.

Editorial Board: Resp. Eds.: N.P. Semenenko, D.S. Korzhinskiy, and G.D. Afanas'yev; Ed. of Publishing House: V.N. Zaviryukhina; Tech. Ed.: A.A. Matveychuk.

PURPOSE: This book is intended for geologists and petrographers, as well as students of geology at schools of higher education.

COVERAGE: The book contains 13 articles representing the reports given by Soviet scientists at the 21st Session of the International Geological Congress. The individual reports deal with theoretical problems of metamorphism and interaction of magmatic masses, formation of granites, magmatic replacement in sub-effusive facies, formation of scarns, and paragenetic analysis. Representatives  
Card 1/5

Gneissose Granites

SOV /

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ZOLOTUKHIN, Valeriy Vasil'yevich; SOBOLEV, V.S. [Soboliev, V.S.], akademik,  
otv.red.; CHEKHOVICH, N.Ya. [Chekhovych, N.IA.], red.izd-va;  
YEFIMOVA, M.I. [IEfimova, M.I.], tekhn.red.

[Geological and petrographic studies of Chernaya Gora and adjacent  
regions in Transcarpathia] Geologo-petrografichni doslidzhennia  
chornoi gory ta pryleglykh raioniv Zakarpattia. Kyiv, Vyd-vo Akad.  
nauk URSR, 1960. 175 p. (MIRA 13:5)  
(Transcarpathia--Petrology)

USENKO, Ivan Stepanovich; SOBOLEV, V.S., akademik, otv.red.; OVCHAROVA,  
Z.G., red.izd-va; KADASHEVICH, O.A., tekhn.red.

[Basic and ultrabasic rocks of the western Azov Sea region]  
Osnovnye i ul'traosnovnye porody Zapadnogo Priazov'ia. Kiev,  
Izd-vo Akad.nauk USSR, 1960. 177 p.

(MIRA 14:3)

(Azov Sea region--Rocks, Igneous)

SOBOLEV, V.S.

Conditions governing the formation of diamond deposits. Geol. i  
geofiz. no.1:7-22 '60. (MIRA 13:9)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN  
SSSR.

(Diamonds)

BOBRIYEVICH, A.P.; SMIRNOV, G.I.; SOBOLEV, V.S.

Mineralogy of xenoliths of grossularite-pyroxene-diathene rocks in  
kimberlites of Yakutia. Geol. i geofiz. no.3:18-24 '60.  
(MIRA 13:9)

1. Amakinskaya ekspeditsiya Yakutskogo geologicheskogo upravleniya  
i Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.  
(Yakutia--Xenoliths) (Yakutia--Kimberlite)



SOBOLEV, V.S.

"Physicochemical principles for the analysis of parageneses of minerals"  
by D.S.Korzhinskii. Reviewed by V.S.Sobolev. Geol. i geofiz. no.7:  
133-136 '60. (MIRA 13:9)  
(Mineralogy) (Korzhinskii, D.S.)

SOBOLEV, V.S.

Formation of anthophyllite. Min.sbor. no.14:80-85 :60.  
(MIRA 15:2)

1. Gosudarstvennyy universitet imeni Ivana Franko, L'viv.  
(Anthophyllite)

SOBOLEV, V.S.

Petroleum occurrences in the salts of the Chelkar dome in the  
northern part of the Caspian Lowland. Trudy VNIIGI no.163:256-  
269 '60. (MIRA 14:6)

(Caspian Lowland---Petroleum geology)

SECRET V 5

MINERALOGICAL ASSOCIATION, 19  
NATIONAL - Third General Assembly  
Moscow, U.S.S.R., 17-20 Aug.

Evans, J. P. - "Mineralogy and the  
classification of minerals"  
BENS, Alexander A., Institute of Mineralogy,  
Geochimistry and Geochemistry, Academy of  
Sciences, USSR, Novosibirsk, 1960 position  
position, "Association of minerals and  
minerals in certain igneous rocks of  
igneous rocks."  
CHUKHOV, Boris V., Dr., Institute of Geology  
and Geochemistry, Academy of Sciences, USSR,  
1960 position  
DOMENYOV, N. A. Novosibirsk - "The Jetties  
of the Kateri-Sven deposits."  
DOLOV, U. A., Novosibirsk - "Chemicals of  
pyroxenes based on the study of fluid  
inclusions."  
GEMEN, Alexander D., Institute of Geology of  
Mineral Deposits, Petrography, Mineralogy  
and Geochemistry, Academy of Sciences, USSR,  
"New data on the study of the pyroxene group from  
the Cu-Ni deposits of the USSR."  
GODVITOV, A. A., Institute of Geology and  
Geochemistry, Siberian Department, Academy of  
Sciences, USSR, Novosibirsk - "Remarks on the  
assemblage of minerals of fayalitic  
mineralization."  
GRIGORYEV, G. P., Prof., Institute  
Mining Institute, 1960 position  
GVAMADIA, G. V., Institute of Geology,  
Academy of Sciences, Georgian SSR, Tbilisi -  
"Changes in pyroxene composition during the  
volcanic process as exemplified in Georgia."  
IVANOV, A. P., Prof., Kazakhstan  
KASHAY, Mir-Ali, Academician Secretary of the  
Department of Geology and Chemical Sciences,  
Academy of Sciences, Azerbaijan SSR, Baku -  
"Mineralogy and origin of the pyroxene types of  
deposit."  
KURBANOV, Alexander A., Prof., Leningrad State  
University, Chair of Geochemistry, 1960 position.  
PETROVICH, N. V., Dr., Central Scientific Research  
Mining Prospecting Institute of Baku, Baku, and  
Precious Metals, Moscow, 1960 position.  
SHARAFKOV, Ilirion I., Leningrad Mining  
Institute, 1960 position. "True crystalline  
chemical forms, as well as factors of the precipitation  
of the formation of minerals."  
SOMLEY, N. V., Novosibirsk - "Paragenetic types of  
granites in the Kateri-Sven and hyperbasites."  
BONDLEY, Vladimir S., Institute of Geology and  
Geochemistry, Siberian Department, Academy of  
Sciences, USSR, Novosibirsk, 1960 position.  
Reported on Deputy Director in 1960, and  
BONDLEY, Vladimir S., Novosibirsk - "High-  
temperature contact metamorphism in the Kateri-  
Sven deposits of the Lower Turgay River."  
SOLYEV, Sergey I., Leningrad Mining Institute,  
1960 position. "Basic trends in the develop-  
ment of metamorphic species in the history of  
the earth."

SOBOLEV, V.S.

Relationship between oil potentials of sediments overlying salt  
dome and faults in the Emba region. Trudy VNIGRI no.186:241-  
252 '61. (MIRA 15:3)

(Emba region--Petroleum geology)

(Emba region--Faults (Geology))

BERNADSKAYA, Lyudmila Genrikhovna; SOBOLEV, V.S., akademik, otv.red.;  
CHEKHOVICH, N.Ya., red.izd-va; RAKHLINA, N.P., tekhn.red.

[Volcanic rocks in the Dnieper-Donets Lowland] Vulkanicheskie  
porody Dneprovsko-Donetskoi vpadiny. Kiev, Izd-vo Akad.nauk  
Ukrainskoi SSR, 1961. 189 p. (Akademiia nauk URSR, Kiev, Institut  
geologichnykh nauk. Trudy no.12). (MIRA 14:12)  
(Dnieper-Donets Lowland--Rocks, Igneous)

ZAVARITSKIY, Aleksandr Nikolayevich; SOBOLEV, Vladimir Stepanovich; SMIRNOVA, Z.A., red. izd-va; GUROVA, O.A., tekhn. red.

[Physicochemical fundamentals of the petrography of igneous rocks]  
Fiziko-khimicheskie osnovy petrografii izverzhennykh gornyykh porod.  
Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po geol. i okhrane neдр, 1961. 382 p. (MIRA 14:11)

(Rocks, Igneous)

GODOVIKOV, A.A.; DISTANOV, E.G.; KCSYGIN, Yu.A.; KUZNETSOV, V.A.; SAKS, V.N.;  
SOBOLEV, V.S.; SOKOLOV, B.S.; TROFIMUK, A.A.; SHAKHOV, F.N.

In memory of Oleg Dmitrievich Levitskii. Geol. i geofiz. no.3:116-  
117 '61. (MIRA 14:5)

(Levitskii, Oleg Dmitrievich, 1909-1961 )



BETEKHTIN, A.G.; GORSKIY, I.I.; KARPOVA, Ye.D.; KREYTER, V.M.; SOBOLEV, V.S.

In memory of V.A.Nikolaev. Geol.rud.mestorozh. no.4:107-109  
Л-Аг '61. (MIRA 14:10)

(Nikolaev, Viktor Arsen'evich, 1893-1960)

KAZARINOV, V.P.; KAS'YANOV, M.V.; KOSYGIN, Yu.A.; POSPELOV, G.L.; SAKS, V.N.;  
SOBOLEV, V.S.; SOKOLOV, B.S.; FOTIADI, E.E.; YANSHIN, A.L.

Academician Andrei Alekseevich Trofimuk; on his 50th birthday.  
Geol. i geofiz. no.9:124-126 '61. (HIRA 14:11)  
(Trofimuk, Andrei Alekseevich, 1911-)

ABDULLAYEV, Kh.M.; ALYAVDIN, V.F.; AMIRASLANOV, A.A.; ANIKEYEV, N.P.;  
ARAPOV, Yu.A.; BARSANOV, G.P.; BELYAYEVSKIY, N.A.; BOKIY, G.P.;  
BORODAYEVSKAYA, M.B.; GOVOROV, I.N.; GODLEVSKIY, M.N.; SHCHEGLOV, A.D.;  
SHAKHOV, F.N.; SHILO, N.A.; YARMOLYUK, V.A.; DRABKIN, I.Ye.;  
YEROFEYEV, B.N.; YERSHOV, A.D.; IVANKIN, P.F.; ITSIKSON, M.I.;  
KARPOVA, Ye.D.; KASHIN, S.A.; KASHKAY, M.A.; KORZHINSKIY, D.S.;  
KOSOV, B.M.; KOTLYAR, V.N.; KREYTER, V.M.; KUZNETSOV, V.A.; LUGOV,  
S.F.; MAGAK'YAN, I.G.; MATERIKOV, M.P.; ODI NTSOV, M.M.; PAVLOV, Ye.S.;  
SATPAYEV, K.I.; SMIRNOV, V.I.; SOBOLEV, V.S.; SOKOLOV, G.A.; STRAKHOV,  
N.M.; TATARINOV, I.M.; KHRUSHCHOV, N.A.; TSAREGRADSKIY, V.A.;  
CHUKHROV, F.V.

In memory of Oleg Dmitrievich Levitskii; obituary. Sov.geol. 4  
no.5:156-158 My '61. (MIRA 14:6)  
(Levitskii, Oleg Dmitrievich, 1909-1961)

SOBOLEV, V.S.

Volcanism of the Siberian Platform and some general geological problems. Geol. i geofiz. no.7:8-15 '62. (MIRA 16:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR, Novosibirsk.  
(Siberian Platform--Geology)

SOBOLEV, V.S.; REVERDATTO, V.V.

High-temperature mineral association at contacts of a differentiated  
trap intrusion on the Lower Tunguska River. Geol.i geofiz.  
no.5:137-138 '62. (MIRA 15:8)  
(Lower Tunguska Valley--Minerals)

SOBOLEV, V.S.; ZOLOTUKHIN, V.V.; DOBRETISOV, N.L.

V.N.Lodochnikov's works on Siberian petrography; on the 75th  
anniversary of his birth. Geol.i geofiz. no.5:138-139 '62.  
(MIRA 15:8)

(Lodochnikov, Vladimir Nikitich, 1887-1943)  
(Siberia--Petrology)

SOBOLEV, V.S.; GODOVIKOV, A.A.

Present-day problems of experimental mineralogy and petrography.  
Geol. i geofiz. no.10:93-103 '62. (MIRA 15:12)

1. Institut geologii i geofiziki Sibirskogo otdeleniya  
AN SSSR, Novosibirsk.

(Petrology)

SOBOLEV, V.S. --

Physicochemical studies of magma and processes associated with it  
carried out in the U.S.S.R. during 1957-1959. Trudy Lab.vulk.  
no.21:83-99 '62. (MIRA 15:4)

(Magma)



SOBOLEV, V.S.

Role of faults in the formation of oil pools in the Emba region.  
Trudy VNIGRI no.190:72-84 '62. (MIRA 16:1)

(Emba region--Petroleum geology)

(Emba region--Faults (Geology))

SOBOLEV, V.S.

Field method of studying flysh formations. Trudy VNIGRI  
no.190:252-258 '62. (MIRA 16:1)  
(Balkan Peninsula--Flysh)

BELOV, Ivan Vasil'yevich; SOBOLEV, V.S., akademik, otv. red.;  
SHLEPOV, V.K., red. Izd-va; GUS'KOVA, O.M., tekhn. red.;  
MAKAGONOVA, I.A., tekhn. red.

[Trachybasalt formation in the Lake Baikal region] Trakhi-  
bazal'tovaya formatsiya Pribaikal'ia. Moskva, Izd-vo Akad.  
nauk SSSR, 1963. 371 p. (MIRA 16:7)  
(Baikal Lake region--Trachybasalt)

SOBOLEV, V.S., akademik, red.; SHATALOV, G.Y.[translator];  
STARIKOVA, L.M., red.; GRIBOVA, M.P., tekhn.red.

[Problems of theoretical and experimental petrology] Voprosy teoreticheskoi i eksperimental'noi petrologii; sbornik statei. Moskva, Izd-vo inostr. lit-ry, 1963. 530 p.  
Translated from the English. (MIRA 16:12)  
(Petrology)

VOLOKHOV, I.M.; DOVGAL', V.N.; KOSYGIN, YU.A.; KUZNETSOV, V.A.;  
LUCHITSKIY, I.V.; POSPELOV, G.L.; POLYAKOV, G.V.; PINUS, G.V.;  
SOBOLEV, V.S.; TROFIMUK, A.A.; SHAKHOV, F.N.

Professor IUrii Alekseevich Kuznetsov, Corresponding Member of the  
Academy of Sciences of the U.S.S.R.; on his 60th birthday. Geol.  
i geofiz. no.4:135-140 '63. (MIRA 16:10)

SOBOLEV, V.S.

Forthcoming Third All-Union Conference on Petrography. Izv. AN  
SSSR. Ser.geol. 28 no.4:3-7 Ap '63. (MIRA 16:6)  
(Petrology—Congresses)

SOBOLEV, V.S., akademik; BAZAROVA, T.Yu.

Crystallization temperature of disthene in pegmatites.  
Dokl. AN SSSR 153 no.4:920-922 D '63. (MIRA 17:1)

1. Institut geologii i geofiziki Sibirskogo otdeleniya  
AN SSSR.

RODOL'F V. I.; AL'BIN V. I.; KUR'KOVA, I. I.; KUR'KOVA, I. I.;  
KUR'KOVA, I. I.; KUR'KOVA, I. I.; KUR'KOVA, I. I.;  
KUR'KOVA, I. I.; KUR'KOVA, I. I.; KUR'KOVA, I. I.; KUR'KOVA, I. I.

[Petrography and mineralogy of kimberlite rocks in  
Yakutia] Petrografiia i mineralogiia kimberlitovykh po-  
rod (Kutii). [By] A. I. Rodol'f V. I. Al'bin V. I. Kur'kova, I. I.;  
Moskva, Nedra, 1961. 189 p. (NIRA 18:1)



ZOLOTOUKHIN, Valeriy Vasil'yevich, SONOLEV, V.S., skladovik, etc.  
red.

[Basic characteristics of protectonics and the problems  
of ore-bearing trap intrusions as revealed by a study of  
the Noril'sk deposit] Osnovnye zakonomernosti prototek-  
toniki i voprosy formirovaniia rudonosnykh trappovykh in-  
truzii (na primere Noril'skoi). Moskva, Nauka, 1964.  
175 p. (MIRA 17:12)



ACCESSION NR: AP4040013

S/0288/64/000/001/0034/0042

AUTHOR: Sobolev, V. S.

TITLE: Contactless measurement of the resistivity of semiconductor materials by an eddy-current method

SOURCE: AN SSSR. Sib. otd. Izv. Seriya tekhnicheskikh nauk, no. 1, 1964, 34-42

TOPIC TAGS: semiconductor, semiconductor resistivity, semiconductor resistivity measurement

ABSTRACT: Theoretical principles and the practice of measuring low-resistivity (under 50 ohm-cm) semiconductor materials by an eddy-current method are considered. Formulas describing the insertion impedance of a lay-on coil, (sensor) with a semiconductor material introduced into its field are developed; frequencies under 200 or 100 mc are recommended for measurement. Design features of the sensors are briefly discussed. A 40-mc instrument developed by

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ACCESSION NR: AP4040013

the author compares the voltage of the sensor with that of a compensating circuit; two sensors, 3- and 6-mm in diameter, cover a resistivity range of 0.005-20 ohm-cm; the error is claimed to be under  $\pm 3\%$ . Orig. art. has: 3 figures, 12 formulas, and 1 table.

ASSOCIATION: Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR, Novosibirsk (Institute of Automation and Electrometry, Siberian Branch, AN SSSR)

SUBMITTED: 20Nov63

DATE ACQ: 18Jun64

ENCL: 00

SUB CODE: EC

NO REF SOV: 010

OTHER: 005

Card 2/2

2. *Phragmites* (common)

Characterizing parameters of transducers for noncontact measurements  
of electric conductivity by the method of vortex currents. Izv.  
Vuzh. no. 3:47-48 Mr '64 (MIRA 17:8)

SOBOLEV, V.S.; BAKUMENKO, I.T.

Temperature of crystallization of transparent albite from  
Strzegom in Lower Silesia. Bul geolog PAN 11 no.2:93-95 '64.

1. Institute of Geology and Geophysics of the Siberian Branch  
of the Academy of Sciences of the U.S.S.R. Presented by K.  
Smulikowski.

SOBOLEV, V.S., akademik; KHLESTOV, V.V.; KEPEZHINSKAS, K.B.

Use of the quartz arrangement for evaluating the temperatures of mineral formation. Dokl. AN SSSR 154 no.6:1355-1358 F '64. (MIRA 17:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.

SOBOLEV, V.S., akademik

Melting incongruence of minerals under the conditions of pressure variation. Dokl. AN SSSR 156 no. 2:341-344 My '64. (MIRA 17:7)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.



SOBOLEV, V.P., *Geologicheskoe*, 1964, No. 1, p. 1-11.  
Izv. AN SSSR, Ser. Geol. Nauki.

High-temperature inclusions in the minerals of perthite and  
granites. Dokl. Akad. Nauk SSSR, 1964, No. 1, p. 1-4.  
Bull. Acad. Sci. USSR, Div. Earth Planet. Sci., 1964, No. 1, p. 1-4.

1. *Journal of Geological Sciences of the USSR*, 1964, No. 1, p. 1-4.  
U.S.S.R.

SOBOL'EV, V.S., akademik; SOBOL'EV, V.V.

Xenoliths in the kimberlites of northern Yakutia and some  
problems of the earth's mantle structure. Dokl. AN SSSR 158  
no.1:108-111 S-2 '64 (MIRA 17:8)

KEPEZHINSKAS, Kazimir Bernardovich; SOBOLEV, V.S., akademik, otv.  
red.

[Statistical analysis of chlorites and their paragenetic  
types] Statisticheskii analiz khloritov i ikh paragene-  
ticheskie tipy. Moskva, Nauka, 1965. 134 p,  
(MIRA 18:8)

MARGAKUSHIN, A. I. *Mineralogicheskii*, SOBOLEV, V. S.: akademik, otv.  
Pribl. 3 p. 1965.

[Problems of the mineral facies of metamorphic and meta-  
sedimentary rocks] Problemy mineral'nykh fatsii metamorfi-  
cheskikh i metasomaticheskikh gornykh porod. Moskva,  
Nauka, 1965. 316 p. (MIRA 18:11)

SOBOLEV, V.S.

Theory of the superposed pickup method for testing with eddy currents.  
Izdatel'stvo no. 2:6-15 '65. (MIRA 18:6)

1. Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR.

L 9452-66 EWT(d)/EEC(k)-2/EWP(1) IJP(c) BC

ACC NR: AP6001928

SOURCE CODE: UR/0115/65/000/001/0057/0059

AUTHOR: Sobolev, V. S.

ORG: none

TITLE: Conference on automatic control and electrical measurement methods

SOURCE: Izmeritel'naya tekhnika, no. 1, 1965, 57-59

TOPIC TAGS: data processing, data processing equipment, scientific conference, metrology, automatic control, electric measurement, electric measuring instrument, electronic measurement

ABSTRACT: The Sixth All-Union Conference on Automatic Control and Methods of Electrical measurements was held in Novosibirsk on 8 to 12 September 1964, sponsored by the Institute of Automation and Electrical Measurement of the Siberian Section Academy of Sciences USSR and two other organizations. The conference was attended by 710 delegates for the purpose of exchanging ideas and coordinating efforts in developing techniques of sampling and data processing. Typical subjects were: Principles of coding biological data, use of x-ray irradiation of excited nuclei in automatic control, control and automation requirements in the chemical industry. Most of the papers given at two sections were devoted to data sampling systems. Statistical problems were stressed at one and system diagnostics at the other. S. M. Mandelshtam presented "Estimate of certain methods of statistical corre-

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UDC: 621.317.002.5(063)

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ACC NR: AP6001928

16  
lation of an instrument with a parameter". Other leading papers were given by G. M. Dor'skiy - Power spectrum analyzer for discrete low-voltage signals; V. P. Prikhod'ko - Two-dimensional statistical analyzer, and A. N. Kasperovich - Elimination of the effects of periodic noise on multiple-point d-c measurements. A group of reports dealt with data sample size. Among the papers heard at the section stressing diagnostics were M. V. Savenkov - Determination of equipment aging characteristics by measuring its parameters during use; V. I. Rabinovich, M. A. Rozov, and L. S. Timonen - The subject and problems of technical diagnostics; N. V. Kinsht - Optimization criteria of trouble-shooting; E. L. Baum - Functional possibilities of threshold elements in diagnostic circuits; and V. F. Motorin - Use of a mathematical logic apparatus for combination trouble-shooting of control objects.

Other subjects covered were reliability, methods of electrical measurement (especially bridge methods), circuit synthesis, self-adaptive and automatic instruments, phase-shift measurements, and determination of the parameters of semiconductors and ferromagnetic materials.

The section on measurement system elements heard such papers as Ya. M. Dikovskiy - Methods of magnetically actuated measurement contacts; A. S. Volkov - Design of magnetostrictive delay lines; and B. K. Grigorovskiy - Investigation of a photoelectric amplifier as a vector meter. Problems of measurement in chemical analysis, dimensional analysis, vibration, flow rate, and digital trigonometry were also treated. R. M. Masitova, V. N. Okhotskaya, and B. I. Puchkina reported on 'Some possibilities of quantitative and qualitative

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ACC NR: AP6001928

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measurements of the characteristics of odors.' Areas in which measuring instruments need improvements are pointed out. The new journal "Avtometriya", which started publication in 1965, was discussed. Some of the conference papers are to appear in this journal; others will be published as a proceedings by "Nauka" press. [JPRS]

SUB CODE: 09, 12 / SUBM DATE: none

Card 3/3 pw



SOBOLEV, V.S.; ZERSHCHIKOVA, M.G.

Calculating the effect of a conductive sphere on a current-carrying  
coil. Defektoskopiia 1 no.3:60-70 '65. (MIRA 18:8)

1. Institut avtomatiki i elektrometrii Sibirskogo otdeleniya AN SSSR.

DOBRETSOV, N.L.; REVERDATTO, V.V.; SOBOLEV, V.S.; SOBOLEV, N.V.; USHAKOVA,  
Ye.N.; KHLESTOV, V.V.

Basic characteristics of the distribution of the facies of  
regional metamorphism in the U.S.S.R. Geol. i geofiz. no.4:  
3-18 '65. (MIRA 18:8)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN  
SSSR, Novosibirsk.

SOBOLEV, V.S., brigadir montazhnikov

High production and good quality. Transp. stroi. 15 no.3:  
34-35 Mr '65. (MIRA 18:11)

SOBOLEV, I.S., akademik

Effect of pressure on the limits of isomorphic substitutions.  
Dokl. AN SSSR 160 no.2:435-437 Ja '65.

(MIRA 12:2)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.

KRIVONOSKOVA, E.M.; DUBININ, V.S., akademik

Paragenetic types of chlorites. Dokl. AN SSSR 161 no.2:436-439  
Mr '65. (MIRA 18:4)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.

1. I. I. Zolotarev, I. I. Zolotarev

Magnetic types of the amphiboles of the hornblende-actinolite series in metamorphic rocks. Dokl. AN SSSR 161 no.4:898-901 O '65.  
(MIRA 18:10)

1. Institut geologii i geofiziki Sibirskogo otdeleniya AN SSSR.

1 4072-06  
ACC NR: AP6013003  
SOURCE CODE: UR/0410/66/000/001/0011/0016

AUTHOR: Sobolev, V.S. (Novosibirsk); Shkarlet, Yu. M. (Moscow)

ORG: none

TITLE: The theory of eddy current quality control [Paper presented at the 7th All-Union Conference on Automatic Control and Methods of Electrical Measurements held in Novosibirsk in September 1965]

SOURCE: Avtometriya, no. 1, 1966, 11-16

TOPIC TAGS: eddy current, nondestructive test, quality control, control theory

ABSTRACT: Although eddy current testing is increasingly used for nondestructive quality control, many aspects of the theory related to the utilization of superposed and screen sensors have not yet been sufficiently developed. The present article derives in detail the density distribution of eddy currents for the general case when the sensing device is located above a conductive n-layer medium. For simplicity, the superposed sensor is substituted by an equivalent current carrying loop. Theoretical results concerning the current density are presented in two diagrams. Orig. art. has: 25 formulas and 3 figures.

SUB CODE: 13 / SUBM DATE: 07Oct65 / ORIG REF: 003

UDC: 620.179.14.538.54

Card 1/1

Investigation of rubber ...

S/844/62/000/000/097/129  
D234/D307

carboxylate rubber it is equal in both cases. Thermomechanical stability of electron-irradiated vulcanized rubbers was about 4 times as high as that of  $Co^{60}$  irradiated rubbers. Those of carboxyl containing rubbers show high strength and wear resistance (abrasion index = 115  $cm^3/kWh$  for nonfilled rubbers irradiated with 24 megarad and 200  $cm^3/kWh$  for nonfilled sulphur rubbers). Chemical relaxation curve of these rubbers shows destruction and re-grouping of salt bonds in its initial part. There are 6 figures and 2 tables.

ASSOCIATION: NII shinnoy promyshlennosti (NII of the Tire Industry); Institut khimicheskoy fiziki AN SSSR (Institute of Chemical Physics, AS USSR)

Card 2/2



L 17560-65 EWC(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(j)/T/EWA(h)/EWA(1) Pc-4/  
Pr-4/Ps-4/Peb/Pu-4 GG/RM

ACCESSION NR: AP4049784

S/0138/64/000/011/0028/0033

AUTHOR: Kaplunov, M. Ya.; Khozak, V. K.; Kozlov, V. T.; Sobolev, V. S.; Tarasova, Z. N.; Borisov, V. A.; Karpov, V. L.; Dogadkin, B. A.

TITLE: Thermoradiation vulcanization of tires <sup>15</sup>

SOURCE: Kauchuk i rezina, <sup>23</sup>no. 11, 1964, 28-33 <sup>18</sup>

TOPIC TAGS: thermoradiation vulcanization, rubber structure, sulfur vulcanization, tire wear, thermal aging

ABSTRACT: The effectiveness of the method of thermoradiation vulcanization <sup>19</sup> was investigated from the point of view of increasing the quality of the tires. The radiation unit consisted of 18 spent, heat-liberating elements from an atomic reactor. The total activity amounted to 76,000 gram-equivalents of radium. Not more than six 5.60-15 tires could be treated at one time in a cylindrical vat with a hermetically closed cover. The tires had a reduced content of vulcanizing agent; one contained a sensitizer of radiation structuring-hexachlorethane. Irradiation was in an argon medium at 0.35 atm pressure. The temperature did not exceed 40C. Radiation doses amounted to 5, 9, 13, and 20 Mrad. The resulting vulcanizate had the optimum relationship of crosslinks of the type -C-C- and

Card 1/2

L 17560-65

ACCESSION NR: A74049784

-C-Sx-C. The destructive processes as well as processes of oxidation and trans-isomerization were less than during sulfur and radiation vulcanization. The relative content of rubber in the "active" portion of the vulcanization network was high. The rubbers had <sup>15</sup> much higher elasticity and strength, as well as increased resistance to thermal aging and wear. Accelerated road tests showed 15-20% greater wear resistance than standard tires. "The relationship between structurization and destruction was determined by A. S. Ly\*kin. N. D. Stepanov, V. Ye. Lesnichi and L. M. Dunayev (member of NIFKhI) took part in setting up the apparatus. The design of the apparatus was developed under the guidance of G. N. Lisov (member of NIFKhI). Measurements of radioactivity and dosimetry were carried out by A. G. Vasil'yev and V. Ye. Drozdova (member of NIFKhI). The TsZL MShZ took part in manufacturing the tires." Orig. art. has: 5 figures and 4 tables.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promy\*shlennosti (Scientific Research Institute for the Tire Industry); Nauchno-issledovatel'skiy fiziko-khimicheskiy institut im. L. Ya. Karpova (Scientific Research Institute for Physics and Chemistry)

SUBMITTED: 00

ENCL: 00

SUB CODE: MT

NO REF SOV: 005

OTHER: 001

Card

2/2

SOBOLEV, V.V.

Branch Leningrad State Univ., ELABUGA, (1943)

"On the intensity of radiation in the inner layers of absorbing and scattering medium."

Iz. AK. Nauk SSSR, Ser. Geograf. I Geofiz., No. 1-6, 1944.

W.E.

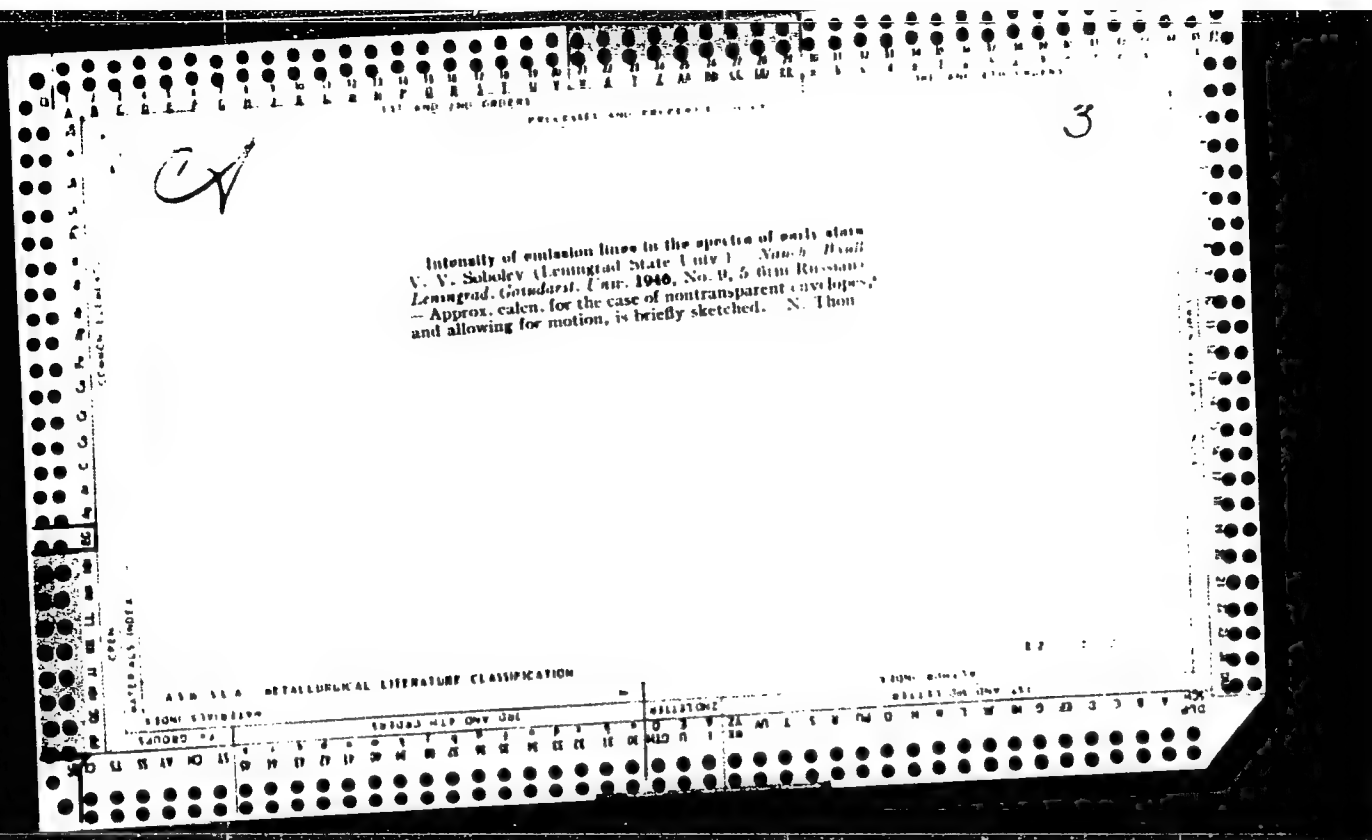
# *Propagation of Waves*

1974. Propagation of Light in Waveguides  
Plasma. V. A. Solov'ev. (English translation  
of Doklady Akad. Nauk SSSR, 1974, Vol. 237, No. 4, pp. 122-124, in  
English.)

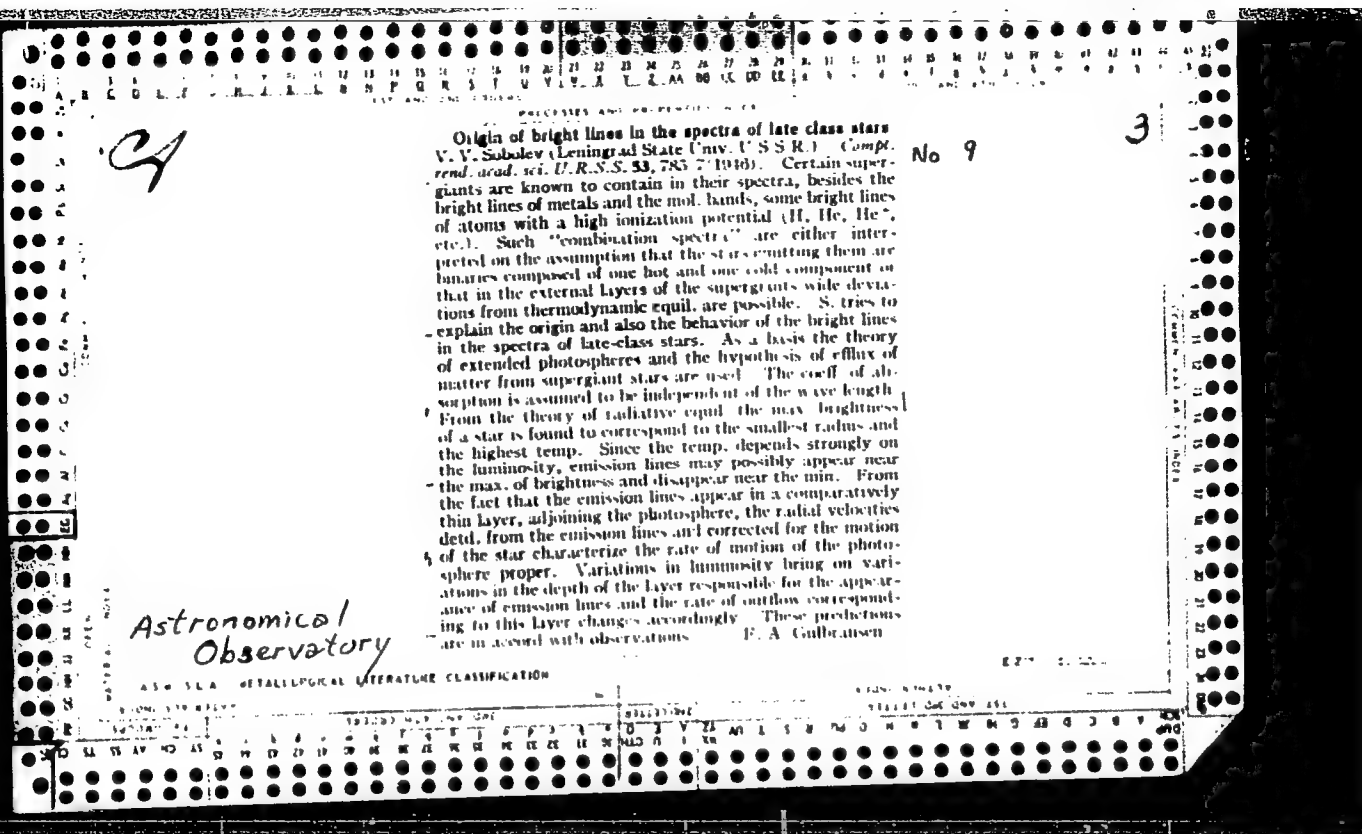
If a luminous source is placed near to reflecting  
surface, the illuminations cannot be properly  
ascertained without taking into account the re-  
flected reflections from this surface. Generally  
speaking, the problem is reduced to the solution  
of an integral equation. Below is discussed a case  
when the solution is obtained in the explicit form.  
The interesting space is taken as perfectly trans-  
parent, but the method is applicable when an  
absorbing (but not scattering) medium is involved.

Yelabuga Br., Leningrad State Univ

1975



1ST AND 2ND ORDERS																										PROCESSES AND PROPERTIES INDEX																										3RD AND 4TH ORDERS																									
<p><b>Excitation and ionization in expanding stellar envelopes.</b>  V. V. Sobolev. <i>Astron. Zhur.</i> <b>23</b>, No. 1, 183-202 (1946). A math. analysis of these phenomena based on the assumptions that the atoms pass only 3 levels of energy corresponding to the ground, excited, and ionization state; that excitation and ionization are due to radiation; that the transition of atoms from a state of excitation to one of radiation is caused by the stars' radiation; and that a stellar envelope consists of parallel layers. M. Hoesch.</p> <p><b>The atmosphere of 10 Lacertae.</b> Lawrence H. Aller. (Indiana Univ., Bloomington). <i>Astrophys. J.</i> <b>104</b>, 347-56 (1946). From high-dispersion spectrograms of this star, equiv. widths have been measured for lines of He I, He II, Ne II, O II, O III, Si III, Si IV, N III, C II, C III, etc. By applying Unsold's methods (C. I. 40, 6080) to these data an effective temp. of 20,200° K. has been detd. for the star's atm., and the values 2.80 and 4.44, resp., for the logarithms of the electron pressure and surface gravity. With these consts. the relative nos. of atoms in the atm. are: H 1000, He 134, O 0.8, Ne 0.7, N 0.18, C 0.10, Si 0.00, Mg 0.05. C. C. Kjaer.</p>																																																																													
<p>AST-SLA DETALLURGICAL LITERATURE CLASSIFICATION</p>																																																																													



SOBOLEV, V.V.

[Moving star shells] Dvizhushchiesia oboloshki zvezd. Leningrad,  
Izd-vo Leningradskogo Gos. Ordena Lenina Univ., 1947 111 p.  
(Stars) (MLRA 7:10)



SOBOLEV, V.V.

Radiant equilibrium of moving shells of stars; doctoral dissertation. Vest. LGU 2 no.3:132-136 Mr '47. (MIRA 12:9)  
(Stars--Atmospheres)

SOBOLEV, V. V.

Sobolev, V. V. - "On the diffusion of light in the atmosphere of planets," Trudy  
Yekaterinburgsk. gos. un-ta (Leningr. gos. un-t), Sektel'ya matem. nauk, Podsektel'ya  
fiz. mat., Leningrad, 1948, p. 9-11

SO:U-3600, 10 July 53, (Leto is 'Ezurnal' Sovetsk. Statya, No.6, 1953).

SOBOLEV, V. V.

Sobolev, V.V. "Physics of the astral atmosphere," Theoretical  
Section, in symposium; *Astronomiya v SSSR za tridtsat' let*,  
Moscow-Leningrad, 1948, p. 112-19

SOBOLEV, V. V.

Sobolev, V. V. - "Stars with brilliant spectral lines", Vestnik Leningr. un-ta, 1948, No. 10, p. 52-68.

SO: U-411, 17 July 53, (Letopis 'Zhurnal 'nykh Statey, No. 20, 1949).

LIST AND FIND ORDERS		PROCESSES AND PROPERTIES INDEX	
523,874			
<p>2922. On the contours of spectral lines produced by the moving atmosphere of stars. <u>SHKLEY, V. V.</u> <i>Astron. J., USSR</i>, 25 (No. 1) 1 (1948) <i>In Russian</i>. English summary in <i>Astron. News Letter (Harvard)</i> (No. 38).—The contours of lines produced by a stellar atmosphere opaque to its own radiation, and with an expansion velocity <math>\gg</math> thermal velocity are examined theoretically. Calculation of surfaces of equal radial velocity yield a formula for residual intensity which is a function of limb-darkening. The results are applied to Wolf-Rayet and P Cygni stars, and agree, and good agreement with observation is obtained. A satisfactory account of the variation of absorption and emission lines of the stars is given. The total intensity in a line in the case of an extended shell is found to depend upon the rotational velocity. M. W. O.</p>			
<p>AST-51A METALLURGICAL LITERATURE CLASSIFICATION</p>			
FROM STAINSLIN		FROM SCHIRV	
127087 4		021157 ONE ONE 151	
127087 4		021157 ONE ONE 151	

523.842

2906. The distribution of the planes of the orbits of visual double stars. SCHUL'YEV, V. V. *Astron. J., USSR*, 25 (No. 3) 109 (1948) [in Russian]. English summary.—Observed in *Astron. News Letter (Harvard)* (No. 39).—Observational material used by Kostovskaya (1946) is re-examined. A uniform distribution with respect to the galactic plane is found, and Kostovskaya's result is attributed to the neglect of the effects of observational selection.

M. W. O.

454 SLA METALLURGICAL LITERATURE CLASSIFICATION

USSR/Physics  
Astronomy  
Light

Aug 48

"Coefficients of Brightness for a Flat Layer in a  
Turbid Medium," V. V. Sobolev, Astr Obs, Leningrad  
State U, 4 pp

"Dok Ak Nauk SSR" Vol LXI, No 5

Integral equations determine the coefficients of  
brightness directly, as a spherical indicatrix.  
Solves these equations numerically for number of  
cases, and compares precise values for the coef-  
ficient of brightness found in this way with values  
found by solving the integral equations through  
successive approximations.

24/49T117

30723. SOBOLEV, V. V.

O Polyarizatsii rassseyannogo sveta. Uchen. Zapiski (Leningr. gos. un-t. im. Zhdanova), Seriya matem, nauk. vyp. 18, 1949, s. 3-16.



30704. SOBOLEV, V. V.

O rasseyanii sveta v atmosferakh zemli i planet. Uchen. zapiski (Leningr. gos. un-t. im. Zhdanova), seriya matem. nauk, vyp. 18, 1949, c. 53-79. --  
Bibliogr: 10 nazv.

SOBOLEV, V. V.

Sobolev, V. V. On the distribution of brightness on a stellar disk. Akad. Nauk SSSR. Astr. Zhurnal 26, 22-27 No. 1, (1949). (Russian).

The author considers the center-to-limb variation of brightness over the apparent disk of a star which is imbedded in a scattering atmosphere of negligible extent. The plane-parallel equations of radiative transfer are set up and their numerical solutions investigated for the case of scattering which is isotropic, or characterized by a linear scattering indicatrix. The results are briefly compared with previous solutions of the same problem by Ambarzumian [C. R. (Doklady) Acad. Sci. URSS (N.S.) 43, 102-106 (1944)] and Chandrasekhar [Astrophys. J. 100, 76-86, 117-127 (1944); these Rev. 6, 76, 190].

Z. Kopal.

Source: Mathematical Reviews,

Vol 10, No. 10

Astronomical  
Observatory,  
Leningrad State U.

3722. Non-coherent scattering of light in stellar atmospheres. V. V. SOBOLEV. *Astr. J., USSR*, 26 (No. 3) 129 (1949) *In Russian*. Engl. Abstr. in *Astr. News Lett. [Harvard]* (No. 46).

*Adv. News Lett. [Harvard] (No. 40).*

Instead of determining approx.  $\epsilon_r$  as  $f(r)$ , the author solves Eddington's equation of radiative transfer for non-extended atmospheres  $\cos \theta$ .  $dI_r/dr = (\sigma_r + \alpha)I_r + \sigma_r + \alpha B_r$  by setting  $(R, v, \eta, \zeta) = S_{\sigma_r}(r, v, \eta, \zeta)$  where  $S_{\sigma_r}$  = intensity of incident light and  $\zeta$  and  $\eta$  are the cosines of the angles of incidence and emergence. An expression for the function  $r$ , involving  $\sigma$  for the case of completely non-coherent scattering, is obtained from the condition that the addition of a thin layer of atmosphere does not alter the scattered light.  $r$  is shown to be a function of the quantity  $\phi(x)$  where  $x = \eta/(1 + \sigma_r \alpha)$ ;  $\phi(x)$  can be calculated from a simple expression. Similarly,  $(R', \eta)$  in a spectral line is calculated using the previously determined  $\phi$ . Introduction of an explicit expression for  $\phi$  yields a linear integral equation with a Cauchy-type core. Calculated central intensities show a strengthening which, together with fluorescent effects, is believed by the author to remove the existing discrepancy between observation and the theory of non-coherent scattering. Line contours for various  $\eta$  calculated from this new treatment are shown to be in essential agreement with observations of the variation of contour over the solar disc.

M. W. OVENDEN

M. W. GIVENDEN

SOBOLEV, V.V.

158T83

USSR/Physics - Light  
Reflection

21 Nov 49

"Diffusion Reflection and Passage of Light by a Plane  
Layer of a Turbid Medium," V. V. Sobolev, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 3

Describes new method for solving classical problem of  
diffusion reflection and passage of light by plane  
layer of turbid medium, previously used in the case  
of spherical indicatrix of dispersion but here gener-  
alized to the case of dispersion indicatrix of arbi-  
trary form. Method involves finding linear integral  
equations that directly determine intensity of ra-  
diation from the medium. Submitted 12 Sep 49 by Acad  
S. I. Vavilov.

158T83

155T71

USSR/Physics - Light, Passage of  
Reflection, Light

Dec 49

"Problem Concerning the Diffusive Reflection and Passage of Light," V. V. Sobolev, 4 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 4

Sobolev had previously obtained very simple linear integral equations for finding intensity of diffusely reflected and diffusely passed light which could be solved explicitly for media of infinitely great optical thickness. Earlier, V. A. Ambartsumyan had clarified structure of coefficients of brightness, i.e., had expressed these complicated

155T71

USSR/Physics - Light, Passage of (Contd)

Dec 49

functions of many variables through certain auxiliary functions of one variable and had given for their determination systems of functional equations easily solvable by numerical methods. With the aid of linear integral equations he had previously obtained for coefficients of brightness, Sobolev derives similar equations for Ambartsumyan's functions Submitted by Acad S. I. Vavilov 12 Sep 49.

155T71

SOBOLEV, V. V.

SOBOLEV, V.V.

Polarization of scattered light. Uch.zap.Len.un. no.116:3-16 '49.  
(MLRA 10:3)

(Polarization (Light)) (Light--Scattering)

SOBOLEV, V.V.

Scattering of light in the atmospheres of the earth and planets.  
Uch.zap. Len.un. no. 116:17-52 '49. (MLRA 10:3)  
(Light--Scattering)

SOBOLEV, V. V.

PA 15814

USSR/ Astronomy - Stars  
Radiation

Mar/Apr 50

"Illumination of Stellar Envelopes in the Absence of Radiative Equilibrium," V. V. Sobolev, Astr Obs, Leningrad State U, 7 pp

"Astron Zhur" Vol XXVII, No 2

Calculates number of neutral and ionized atoms per cubic centimeter for the two cases where stellar envelope is small or great in optical thickness. Applies resulting formulas to the Nova Hercules 1934.

15814



SOBOLEV, V. V.

PA 192T3

USSR/Astronomy - Astrophysics

Sep/Oct 51

"New Method in the Theory of Light Dispersion,"  
V. V. Sobolev, Leningrad State U imeni Zhdanov

"Astron Zhur" Vol XXVIII, No 5, pp 355-362

New methods of investigation are desirable. Sobolev proposes the new concept of probability of exit of light quantum from given spot of medium in a definite direction. Introduction of this concept simplifies soln of some problems of theory of light dispersion, and its phys interpretation becomes more distinct.

192T3

SOBOLEV, V.V.

TREASURE ISLAND BIBLIOGRAPHIC REPORT

AID 121 - I

PHASE I

Call No.: AF53969C

BOOK

Authors: AMBARTSUMYAN, V.A., MUSTEL', E.R., SEVERNYY, A.B., SOBOLEV, V.V.

Full Title: THEORETICAL ASTROPHICS

Transliterated Title: teoreticheskaya astrofizika

Publishing Data

Originating Agency: None

Publishing House: State Publishing House of Technical-Theoretical Literature

Date: 1952

No. pp.: 635

No. of copies: 5,000

Editorial Staff

Editor: None

Tech. Ed.: None

Editor-in-Chief: None

Appraiser: None

Others: Pikel'ner, S.B. wrote two paragraphs.

Text Data

Coverage: A textbook on astrophysics, mainly related to the study of the sun as a star. Covers radioactive equilibrium of the stellar photospheres, spectra of the stars and the sun, the physics of the solar atmosphere, nebulae, new stars (novae), interior structure of the stars and interstellar matter.

Comments: Primarily a textbook, based on numerous sources (1927-1951). Does not compare with the more clearly written American texts (such as L.H. Aller's Astrophysics, 1953)

SOBOLEV, V.V.

AID 121 - I

Teoreticheskaya pshtokizika

Purpose: Approved as a textbook in state universities by the Ministry of Higher Education, U.S.S.R.

No. of Russian and Slavic References: 66, with many footnote references.

Available: AID, Library of Congress.

2/2

USSR/Astronomy - Radiation

Jul/Aug 52

"Theory of Nonstationary Fields Radiation.  
Part I." V. V. Sobolev, Astr Obs of Leningrad  
State U

"Astron Zhur" Vol 29, No 4, pp 406-417

A further development of previous works by the  
author "Vest Leningradskogo Universiteta" No 10,  
1948; "Astron Zhur" 27, 2, 1950). Deals with  
nonstationary processes of radiational diffusion.  
States that, in physics, the theory may be applied

226742

to scattering of light on resonant line; in astro-  
physics, to diffusion of resonant radiation on non-  
stationary objects, such as shells of novas, solar  
prominences, etc. Received 8 May 52.

SOBOLEV, V. V.

226742

PA 234T55

USSR/Astronomy - Radiation Diffu-      Sep/Oct 52  
sion

"Theory of the Nonstationary Field of Radiation  
II," V. V. Sobolev, Astr Obs of Leningrad State U

"Astron Zhur" Vol 29, No 5, pp 517-525

Author started discussion of nonstationary processes of diffusion of radiation in a previous article (cf. "Astron Zhur" Vol 29, No 4, 1952). Here he derives new functional eqs to det probabilities of quantum emission from the medium. Methods applied are those of V. A. Ambartsunyan

234T55

in analysis of light scattering and fluctuations of intensity of the Milky Way. As example, the results are applied to the luminosity of new stars.

SOBOLEV, V. V.

234T55

SOBOLEV, V. V.

2000

1/Sobolev, V. V. The theory of scattering of light in  
planetary atmospheres. *Uspchi Astr. Nauk* 6 (1954), 1 - 174  
250-280. (Russian)  
A survey of recent research by Russian authors on the  
theory of multiple scattering of light in extended regions,  
principally the works of Ambartsumian, Kuznetsov, and  
Sobolev. R. G. Langebartel (Urbana, Ill.).

GA

SOBOLEV, V. V.

AID - P-57

Subject : USSR/Astronomy

Card : 1/ 1

Author : Sobolev, V. V.

Title : On the Theory of Brightness of Novae

Periodical : Astron. zhur., V. XXXI, 1, 15-26, Ja - F 1954

Abstract : Granted: a film (or envelope) detaches itself from the star at the beginning of the flare; this film has a large optical thickness which diminishes with its expansion. Sources of brightness are: 1) the energy in the envelope, and 2) energy from the star. Mathematical solutions of the brightness are given and theoretical deductions as to the temperature made. Theoretical and actual brightness are shown in three graphs. The article is based on the works of V. A. Ambartsumyan, Sh. G. Gordeladze, D. McLaughlin, F. Beileke, and W. Harper. Bibliography gives 7 references (4 Russian)

Institution : Leningrad University im. A. A. Zhdanov

Submitted : October 14, 1953

Sobolev, V.V.

K-6

USSR/Optics - Spectroscopy.

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7789

Author : Sobolev, V.V.

Inst : Leningrad State University, USSR.

Title : Formation of Absorption Line in Incoherent Scattering of Light.

Orig Pub : Astronom. zh., 1954, 31, No 3, 231-248

Abstract : The author considers the problem of the formation of absorption line in star spectra with incoherent scattering of light, i.e., under the assumption that the radiation is redistributed over the frequencies inside the line for the elementary active scattering. The problem of the formation of absorption lines in star spectra for a totally incoherent scattering (when the frequency of the scattered radiation is independent of the frequency of the incident radiation) was first solved by the author previously (Astronom Zh, 1949, 26, 129). The problem solved in this

Card 1/3

- 67 -



USSR/Optics. - Spectroscopy.

K-6

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7789

article is the same, but with allowance for fluorescence and by using another method. The problem consists of finding the intensity of the radiation emerging from the star at a given frequency and in a given direction  $I_\nu(0, \eta)$ , where the value of  $I_\nu(0, \eta)$  corresponds to the solutions of the following equation:  $\eta \frac{dI_\nu(z, \eta)}{dz} = (\sigma_\nu + \alpha) I_\nu(z, \eta) - (1 - \varepsilon) \frac{\sigma_\nu}{2} \times \int_0^\pi \sigma_{\nu'} d\nu' \int_{-1}^1 I_{\nu'}(z, \eta') d\eta' - (\alpha + \sigma_\nu \varepsilon) B$

Where  $I_\nu(z, \eta)$  is the intensity of radiation at the frequency  $\nu$ , penetrating at the depth  $z$  under the angle  $\cos^{-1} \eta$  with the normal,  $\sigma_\nu$  is the scattering coefficient in the line, and  $\alpha$  and  $B$  are the coefficients of absorption and radiation in a continuous spectrum, while  $\varepsilon$  is the coefficient taking fluorescence into account. The solution is obtained by the method derived by the author (Astronom Zh, 1951, 28, 355), based on the use of the quantity  $p(z, \nu, \eta)$ , which had the probability of

Card 2/3

- 68 -

USSR/Optics - Spectroscopy.

K-6

Abs Jour : Referat Zhur - Fizika, No 3, 1957, 7789

emergence from the medium of a quantum, absorbed at a depth  $z$ , at a frequency  $\gamma$  at an angle  $\cos^{-1} \eta$  to the normal (after, scattering in the medium). The equation derived for the quantity  $p(z, \gamma, \eta)$  made it possible to express  $I(0, \eta)$  in terms of known quantities. Calculations were made of the contours of the lines on the basis of the solution obtained, and parallel calculations were also made of the contours under the assumption that the scattering is coherent. The problem of the central intensities of the lines and of the changes in the contours of the lines upon transition from the center towards the edge of the disk of the star are considered. It was found that the theory of the formation of absorption line in incoherent scattering is in better agreement with observations than that made under the assumption of coherent scattering.  
Bibliography, 18 titles.

Card 3/3

- 69 -

SOBOLEV, V. V.

300-2mf  
H. B. R.

Carbon dioxide radiation in the 15- $\mu$  region in a gas discharge. N. Ya. Doloncova and V. V. Solov'ev. *Soviet Phys. JETP* 1, 611-13 (1955) (Engl. transl.) See C.A. 49, 14481c. H. B. R.

1007  
H. B. R.

SOBOLEV, V.V.

USSR/ Astronomy

Card 1/1      Pub. 127 - 7/12

Authors      : Sobolev, V. V.

Title      : Diffusion of radiation with redistribution of quanta according to their frequencies

Periodical   : Vest. Len. un. ser. mat. fiz. khim. 5, 85-100, May 1955

Abstract    : Causes of star spectral line diffusion are analyzed. A new theory concerning the diffusion of star radiation, namely, the theory of quanta redistribution according to their frequencies, is discussed. The formation of absorption lines in the star spectra and the diffusion of the resonant radiation in gaseous nebulae ( $L\alpha$  - radiation) are explained in the view of this new theory. Ten references: 1 USA, 1 Netherlands, 3 British, 5 USSR (1933-1954). Tables; graphs.

Institution : .....

Submitted   : September 10, 1954

*Sobolev, V. V.*

*4  
0  
1-2mf*  
Sobolev, V. V. Diffusion of radiation with redistribution of frequencies. I. Vestnik Leningrad. Univ. 10 (1955), no. 5, 85-100. (Russian)

*200/20*  
In a gas so tenuous that the pressure is neglected the radiation diffusion is treated considering energy decay levels in the atom and the Doppler effect arising from the thermal motion of the atoms. The diffusion integral equation is set up and solved for three cases: 1) Radiation with no redistribution of frequencies; 2) radiation with complete redistribution; 3) radiation with the theoretically predicted amount of redistribution. Numerical integration is used to handle the last two cases. The radiation pressure and the contours of the spectral lines are determined for the three cases. Cases 2 and 3 give nearly the same results but these are materially different from those of case 1. *200/20*  
R. G. Langebartel (Urbana, Ill.).

LPH

*SP 428*

SOBOLEV, V. V.

Sobolev, V. V. Diffusion of radiation with redistribution of frequencies. II. Vestnik Leningrad. Univ. 10 (1955), no. 11, 99-111. (Russian)

In his earlier paper [same Vestnik 10 (1955), no. 5, 85-100; MR 17, 1142] the author derives formulae for the radiation field in a diffusive material based on a study of the integral equation for the coefficient of radiation. In the present paper he obtains formulae for the radiation as it leaves the material based on the equation for the probability of quantum departures from the material. He indicates how results could be applied to the construction of spectral line contours, the determination of the pressure of light at the material's boundary and of the number of atoms in the excited state.

R. G. Langebartel (Urbana, Ill.)

FD-2368

USSR/Physics - Emission spectrum of CO<sub>2</sub>

Card 1/1      Pub. 146 - 33/34

Author : Dodonova, N. Ya., and Sobolev, V. V.

Title : Radiation of carbon dioxide in the region of 15 microns in an electric discharge

Periodical : Zhur. eksp. i teor. fiz. 28, 764-766, Jun 1955

Abstract : Investigation of the radiation of an electric discharge in CO<sub>2</sub> in the region of 15 microns is of interest from the viewpoint of expanding our ideas concerning the process of excitation, scattering, and transmission of the oscillatory energy of molecules. The authors discuss the results of measurements conducted at pressures of gas (CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>) from 10 to 200 mm/Hg and discharge current strength of 280 milliamperes (the discharge tube was described earlier by senior author in DAN SSSR, 98, 1954) and with sylvite-prism monochromator. They present the emission spectrum of CO<sub>2</sub> in a discharge at 12-18 micron region, and the dependence of the intensity of the emission band of CO<sub>2</sub> at 13.7 microns upon the pressure CO<sub>2</sub>, N<sub>2</sub>, or H<sub>2</sub>. They thank Academician A. N. Terenin, who guided this work. Seven references: e.g. A. N. Terenin and T. G. Neuymin, Izv. AN SSSR, ser. khim. 5, 1952; B. P. Kozyrev, Usp. fiz. nauk 44, 1951.

Institution : Leningrad State University

Submitted : January 2, 1955

*Sobolev, V. V.*

USSR/ Astronomy

Card 1/1      Pub. 8 - 13/13

Authors      : Sobolev, V. V.

Title        : A book review

Periodical   : Astron. zhur. 32/1 95-96, Jan-Feb 1955

Abstract    : A review of a new book written by Kurganov is given. The title of the book is, "Basic Methods in Transfer Problems, Radiative Equilibrium and Neutron Diffusion." Oxford 1952.

Institution : .....

Submitted   : .....



SOBOLEV, Viktor Viktorovich; RAKHLIN, I.Ye., redaktor; GAVRILOV, S.S.,  
tekhnicheskii redaktor

[Transfer of radiant energy in stellar and planetary atmospheres]  
Perenos luchistoi energii v atmosferakh zvezd i planet. Moskva,  
Gos. izd-vo tekhniko-teoret. lit-ry, 1956. 391 p. (MIRA 10:4)  
(Stars--Radiation) (Planets) (Radiation)

*Sobolev V.V.*

B-4

USSR/Physical Chemistry - Molecule. Chemical Bond

Abs Jour : Referat Zhur - Khimiya, No 2, 1957, 3469

Author : Dodonova N. Ya., Sobolev V.V.

Inst : Leningrad University

Title : Infrared Radiation of Nitrogen Oxide in Electric Discharge

Orig Pub : Vestn. Leningr. un-ta, 1956, No 10, 3-5

Abstract : Study of radiation spectrum of NO in electrical discharge. In the spectrum maxima were observed at 3, 4.4 and 4.8 $\mu$ , apparently due not to NO but higher oxides of nitrogen formed in the discharge. Addition of nitrogen into the discharge tube does not affect intensity of radiation of the 4.8 $\mu$  band. This fact is in conflict with the assumption of A.N. Terenin and G.G. Neuymin (Izv. AN SSSR, Ser. khim. 1942, 5, 246) of an enhanced radiation of CO and CO<sub>2</sub> on addition of N<sub>2</sub>, as a result of intermolecular energy transmission.

Card 1/1

- 6 -

SOBOLEV, V. V.  
USSR/Physical Chemistry. Crystals.

B-5

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14520

Author : E. F. Gross, V. V. Sobolev

Inst : -

Title : Absorption Spectra and Excitons Emissions in a CdSe Crystal

Orig Pub: Zh. tekhn. fiziki, 1956, 26, No 7, 1622-1624

Abstract: In the absorption spectrum of monocrystalline plates of CdSe, 10-30 microns thick, at 4.2°K, one observes around the area of main absorption in the region of 6653-6800 Å many clearly defined lines and bands, which are ascribed to the excitation of the exciton. As in the case of CdS, strong lines and bands are located on the short wave side of the region of main absorption while the weak lines and bands are on the long wave side. As in the case of CdS, in the CdSe luminescence spectrum at 77.3°K, one observes a group of equidistant ( $\Delta\lambda=182\text{cm}^{-1}$ ) rather narrow bands, analogous to the "green" luminescence

Card 1/2

USSR/Physical Chemistry. Crystals.

B-5

Abs Jour: Ref Zhur-Khimiya, No 5, 1957, 14520

Abstract: bands of CdS and a group of lines analogous to the "violet" CdS luminescence. Wave lengths of the centers of the two short wave emission bands of  $\lambda 6811$  and  $6837 \text{ \AA}$  at  $77.3^\circ\text{K}$ , brought to the temp. of  $4.2^\circ\text{K}$ ,  $\lambda 6740$  and  $6766 \text{ \AA}$ , coincide with two strong lines of absorption,  $\lambda 6733$  and  $6753 \text{ \AA}$ . These bands are considered due to emission of the exciton during its annihilation. As in the case of CdS, lines and bands of CdSe emission and absorption are differently polarized.

Card 2/2